

MOUTHWASH AND METHOD FOR PREVENTING AND REMOVING DENTAL PLAQUE

This application is a continuation-in-part of the following:

(a) application Ser. No. 642,114, entitled "Mouthwash and Method For Preventing and Removing Dental Plaque", filed on Dec. 18, 1975 not abandoned;

(b) application Ser. No. 483,010, entitled "Injectable Solutions and Processes of Using Such", which was filed on June 25, 1974, and which is now U.S. Pat. No. 3,982,017, issued on Sept. 21, 1976;

(c) application Ser. No. 369,236, entitled "Injectable Solution", which was filed on June 12, 1973, and which is now U.S. Pat. No. 3,924,000, issued on Dec. 2, 1975;

(d) application Ser. No. 283,662, entitled "Treatment of Non-Surgical Osteolysis of Bone", which was filed on Aug. 25, 1972, and which is now U.S. Pat. No. 3,805,776, issued on Apr. 23, 1974;

(e) application Ser. No. 283,663, entitled "Method of Fusing Bones", which was filed on Aug. 25, 1972, and which is now U.S. Pat. No. 3,828,772, issued on Aug. 13, 1974;

(f) application Ser. No. 123,830, entitled "Non-Surgical Removal of Abnormal New Bone Proliferation", which was filed on Mar. 12, 1971, and which is now U.S. Pat. No. 3,767,812, issued on Oct. 23, 1973; and

(g) application Ser. No. 113,362, entitled "Method of Treating Bone Fractures and Non-Unions", which was filed on Feb. 8, 1971, and which is now U.S. Pat. No. 3,741,204, issued on June 26, 1973.

FIELD OF THIS INVENTION

This invention relates to the prevention and removal of dental plaque.

BROAD DESCRIPTION OF THIS INVENTION

An object of this invention is to provide a process for the prevention and removal of dental plaque and dental calculus, and the prevention of dental caries. Other objects and advantages of this invention are set out elsewhere herein or are obvious to one ordinarily skilled in the art herefrom.

This invention achieves the objects and advantages of this invention.

This invention involves a method of treating teeth for the removal of dental plaque and/or dental calculus from teeth and the prevention of the formulation of dental plaque and/or dental calculus on teeth. The process involves contacting the teeth with a sufficient and effective amount to achieve such purpose of a mouthwash. The mouthwash is a liquefied composition of an effective amount of a non-necrotic fatty acid compound prepared from an unsubstituted, unsaturated fatty acid having at least one double bond, a liquid carrier, an effective amount of a buffering agent and an effective amount of ethanol, the pH of said liquefied composition being between 8 and 11.

The most preferred mouthwash contains about 5 percent of sodium oleate, about 1.5 percent of ethanol, enough disodium hydrogen phosphate to adjust the pH to about 9.8, and the remainder water.

This invention also includes the method of treating teeth for the prevention of caries or tooth decay. The method includes contacting the teeth with a sufficient and effective amount to achieve the purpose of a mouth-

wash. The mouthwash is a liquefied composition of an effective amount of a non-necrotic fatty acid compound prepared from an unsubstituted unsaturated fatty acid having at least one double bond, a liquid carrier, an effective amount of a buffering agent and an effective amount of ethanol, the pH of said liquefied composition being between 8 and 11. The most preferred mouthwash contains about 5 percent of sodium oleate about 1.5 percent of ethanol, enough disodium hydrogen phosphate to adjust the pH to about 9.8 and the remainder water.

This invention further includes the mouthwash composition which is a liquefied composition comprised of an effective amount of a non-necrotic fatty acid compound prepared from an unsubstituted, unsaturated fatty acid having at least one double bond, a liquid carrier, an effective amount of a buffering agent and an effective amount of ethanol. The pH of said liquefied composition is between 8 and 11. The most preferred mouthwash composition contains about 5 percent of sodium oleate, about 1.5 percent of ethanol, enough disodium hydrogen phosphate to adjust the pH to about 9.8 and the remainder water.

An important advantage of this invention is that no abrasive material, like that used in most toothpastes and dentifrices, has to be used in order to remove and prevent dental plaque formation. A further advantage of this invention is that the mouthwash of this invention eliminates the need to have dentists remove dental plaque from teeth by scrapping with sharpened tools or instruments.

The mouthwash is particularly effective in preventing cavities or caries around metal teeth braces. (Any mouthwash containing HCl or other acid would react with metal teeth braces.)

The mouthwash also substantially alleviates the sensitivity syndrome of teeth.

DETAILED DESCRIPTION OF THIS INVENTION

The term liquefied composition includes slurries, suspensions, solutions, etc.

All of the components of the liquefied composition must be and are substantially non-toxic in the amounts and under the conditions of use. The useful (vascular sclerosing) fatty acid compounds must be non-necrotic in effect or operation and must not cause the pathologic death of one or more cells, or a portion of any tissue or any organ, resulting from irreversible damage to the nucleus.

The pH of the liquefied composition should be between about 8 and about 11, and preferably between about 9 and about 10. Each non-necrotic (sclerosing) unsaturated fatty acid compound will produce a different pH at a different concentration levels, so non-toxic agents may be added to adjust the pH level, e.g., sodium dihydrogen phosphate or sodium hydroxide can be used when sodium oleate or another non-necrotic (vascular sclerosing) unsaturated fatty acid compound is used.

It should be noted that aqueous solutions of alkali metal salts of fatty acids in general have an alkaline or neutral pH. For example, sodium oleate has an alkaline pH - this is usually due to hydrolysis in the aqueous solution.

The most preferred unsaturated fatty acids have eighteen carbon atoms with one double bond in the middle of the chain. The most preferred of such fatty acids is oleic acid (i.e., cis-9-oleic acid or cis-9-octadecenoic